Application No. 09/651,754 Docket No. 20-0139

AMENDMENTS TO THE CLAIMS

1 (Currently Amended): A transceiver-processor building block for use as part of an electronic radio system multifunction slice, the building block comprising:

a plurality of simultaneously operable bi-directional transceivers, wherein each of the transceivers is a single module operable over a wide band of frequencies in order to support a wide range of radio function frequencies;

a processor coupled to the transceivers, to control operation of the transceivers and to process data transmitted and data received through the transceivers;

a local RF control bus inaccessible directly from outside the multifunction slice and coupled between the processor and the transceivers to provide control signals to the transceivers;

a network bus coupled to the processor; and

a network bus connector coupled to the network bus to provide direct accessibility to the network bus and, through it, to the processor, from outside the multifunction slice, wherein multiple multifunction slices are interconnectable through the network bus, to provide increased functionality, and wherein multiple identical building blocks are interconnectable and programmable to form a set of multifunction slices that can be combined to form a programmable radio system capable of performing a desired set of functions.

2 (Original): The building block of claim 1, further comprising an external control bus coupled to the processor and an external control bus connector providing direct accessibility to the external control bus from outside the multifunction slice.

3 (Cancelled).

4 (Original): The building block of claim 1, wherein the network bus carries unencrypted information and is isolated from the local RF control bus.

5 (Original): The building block of claim 4, wherein the network bus is isolated from the local RF control bus with electromagnetic shielding.

6 (Original): The building block of claim 1, wherein the processor includes encryption and decryption support for each transceiver in the plurality of transceivers.

7 (Original): The building block of claim 1, further comprising encryption and decryption support circuitry coupled to the processor for each transceiver in the plurality of transceivers.

8 (Original): The building block of claim 6, wherein the encryption and decryption support includes at least one of KGV-8, KGV-10, KGV-11, KGV-23, KG-84A, KGR-96, KG-125, KY-58, and Havequick Applique encryption and decryption support.

9 (Original): The building block of claim 4, wherein the network bus transfers transmission coordination data and voice data into and out of the building block.

10 (Original): The building block of claim 3, wherein the local RF control bus carries tuning data for the plurality of transceivers.

11 (Original): The building block of claim 10, wherein the local RF control bus carries intermediate frequency bandwidth information and intermediate frequency gain characteristics for the plurality of transceivers.

12 (Original): The building block of claim 2, wherein the external control bus carries antenna configuration data.

13 (Original): The building block of claim 2, wherein the external control bus carries antenna interferometer configuration data.

14 (Currently Amended): An electronic radio system multifunction slice for supporting a predetermined number of communication threads, the multifunction slice comprising:

an RF aperture interface;

a plurality of simultaneously operable bi-directional transceivers coupled to the RF aperture interface, wherein each of the transceivers is a single module operable

over a wide band of frequencies in order to support a wide range of radio function frequencies;

a processor coupled to the transceivers, to control operation of the transceivers and to process data transmitted and data received through the transceivers;

a local RF control bus inaccessible directly from outside the multifunction slice and coupled between the processor, the transceivers, and the RF aperture interface, to provide control signals from the processor to the transceivers and the RF aperture interface;

a network bus coupled to the processor;

a network bus connector coupled to the network bus to provide direct accessibility to the network bus from outside the multifunction slice, wherein multiple multifunction slices are interconnectable through the network bus, to provide increased functionality and to form a programmable radio system capable of performing a desired set of functions; and

a backplane interface coupled to the processor, the backplane interface providing a backplane output and a backplane input.

15 (Original): The electronic radio slice of claim 14, further comprising an external control bus coupled to the local RF control bus and an external control bus connector providing direct accessibility to the external control bus from outside the multifunction slice.

16 (Original): The electronic radio slice of claim 14, wherein the local RF control bus is restricted to carrying control data information between the processor, the transceivers, and the RF aperture interface.

17 (Original): The electronic radio slice of claim 14, wherein the network bus carries unencrypted information and is isolated from the local RF control bus.

18 (Currently Amended): The electronic radio slice of claim 17, wherein the network bus transfers transmission coordination data and voice data into and out of the multifunction slice, ~~building block,~~ the local RF control bus carries tuning data for the plurality of transceivers, and the external control bus carries antenna configuration data.

19 (Currently Amended): A method for operating a transceiver-processor building block in an electronic radio system multifunction slice, the method comprising:

providing a plurality of simultaneously operable bi-directional transceivers coupled to a processor, wherein each of the transceivers is a single module operable over a wide band of frequencies in order to support a wide range of radio function frequencies;

communicating unencrypted data to the processor over a network bus coupled to the processor, the network bus coupled to a network bus connector providing direct accessibility to the network bus from outside the multifunction slice;

processing the unencrypted data to form control data;

communicating the control data to the transceivers over a local RF control bus between the processor and the transceivers, the local RF control bus being inaccessible directly from outside the multifunction slice;

providing at least one additional electronic radio system multifunction slice; and

interconnecting the multifunction slices through the network bus, wherein a set of multifunction slices is combined and configured to form a programmable radio system capable of performing a desired set of functions.

20 (Original): The method of claim 19, further comprising the step of communicating antenna configuration data over an external control bus coupled to the local RF control bus to an antenna outside the multifunction slice.

21 (Original): The method of claim 19, further comprising the step of electrically isolating the network bus from the local RF control bus.

22 (Original): The electronic radio slice of claim 21, wherein electrically isolating comprises electrically isolating with electromagnetic shielding.